in the parrot it is the first and fourth toes which are opposed to the second and third, instead of the first and second to the others.

In remarkable contrast with the slowness of its limb-movements is the quickness with which it can move its eyes, and above all its tongue. The chamæleon lives largely upon flies, and at first sight it would seem impossible that so apparently torpid and sluggish an animal should be able to reach and seize creatures not only active in their movements, but possessing the power of flight. At this season, when the chamæleon's appetite is keen, it may often be observed when a fly has been introduced into its cage to move about with comparative celerity, attentively watching the fly's movements, now with one and now with the other eye. It sooner or later happens that the fly settles for a few seconds somewhere within half a foot's distance of the chamæleon's head. Then the chamæleon's mouth may be observed to open and the apex of the tongue to protrude. In an instant it has shut again and the fly has disappeared. In fact the chamæleon has spit out, as it were, its enormously extensible tongue upon the insect, secured it by the viscid secretion with which the tongue is coated, and again withdrawn that organ together with the prey, but the whole has been effected with such amazing rapidity that the observer's eye cannot follow the movements of the reptile's tongue. It is projected and withdrawn without the slightest noise, but in the twinkling of an eye.

As I have said, it is this tongue which is as it were the centre of the chamæleon's organisation, and this tongue-movement is the very essence of its existence, and is its whole *raison d'être*. Without it the animal's life would be impossible, while the very slowness and deliberation of its other movements are a gain, since they enable the chamæleon to advance upon its prey within shooting distance without alarming it.

(*To be continued.*)

THE UNEXPLORED PARTS OF EUROPE AND ASIA

UNDER this title M. Venoukoff has just published an interesting paper on those parts of Europe and Asia which remain yet unexplored. It is not to be wondered at that the name of Europe should be among incompletely explored parts of the world, as there are even in Europe considerable spaces, especially in the Balkan peninsula and in North-Eastern Russia, which await scientific exploration. The war of 1877-78 certainly afforded occasion for surveying and mapping wide spaces in Bulgaria and Eastern Roumelia, but the geography of Macedonia, Epirus, and even of Thessaly is far from being exact. In Russia all the northern provinces, from the Norwegian frontier to the Ural Mountains are only known superficially; we know here only the coast and the three principal rivers—the Onega, the Dwina, and the Petchora. The great Samoyede *tundra* remains quite unexplored. Notwithstanding several journeys in the Northern Ural, this country is little known, and the interior of the great double island of Novaya Zemlya remains quite unknown, both affording, however, a very great interest, especially for geologists. As to the hydrographical exploration of the Kara Sea and of the Arctic Ocean north of Siberia, M. Venoukoff does not give them much of importance, notwithstanding what he terms the pompous newspaper writing about the trade with Northern Siberia, and he thinks that there are on the Asiatic continent several places far more interesting for explorers. For instance, Chekanovsky's and Nordenskjöld's explorations have quite changed our ideas on the geography of that land, twice as wide as France, which belongs to the basins of the Khatanga and of the Anabara. It would be a rich field of exploration for a bold traveller. The lands east from the Lena remain quite unknown, and the northern slopes of the Stanovoï Mountains are still a *tabula rasa;* the sources of the Indighirka, Kolyma, Omolon, Aniouy, and Ghijiga rivers were never visited by Europeans, and Wrangel mapped them only from hearsay. The land of the Chukchis is better known, thanks to the work of the explorers of the last century, to the recent Russian expeditions, and to Nordenskjöld's information; but all our knowledge of this country is far from being exact, and Europeans have never penetrated to the interior of the peninsula which separates the Arctic Ocean from the Pacific, and which promises to have a future as a meeting-point for the whalers, as well as for the trade in mammoth bones. The land of the Koriaks is less attractive, except for a naturalist. As to Kamchatka, certainly it is passably well known, but what a mass of work remains to be done in mapping the west coast, preparing a map of the interior, studying the most interesting geology, botany, and ethnography of the peninsula! Further south we see that the northern part of Sakhalin remains quite unexplored; the Sikhota-alin Mountains are all but unknown; and the regions between the Ussuri and Sungari Rivers, the sources of the Nonni and Argoun Rivers promise very much to the naturalist and to the geographer who would study them. The interesting peninsula of Corea will certainly be explored as soon as access to it is not forbidden to Europeans. In the Chinese Empire there are spaces as wide as England which remain unexplored. As to Eastern and Northern Thibet we are not yet sure as to what is the true source of the Brahmaputra and of the Irawaddi, and what is the importance in the orography of this land of the Kuen-Lun range. The inaccessible deserts of Eastern Turkestan are as deserving of exploration as Thibet, and the reaching of the sources of the Hoang-ho is one of the *desiderata* of geographical science. The great desert of Gobi is passably well explored, but still there remains an important problem: Does there exist, under the 42° and 43° N. lat., a chain of mountains which crosses the desert and unites the eastern Thian-Shan with the In-Shan Mountains? In northern Mongolia there still remain unknown the highlands at the upper parts of the Selenga River. In China proper there is certainly no room for geographical discoveries, but there remains very much to do as to astronomical determinations, and the substitution of a true picture of nature for the hypothetical chains of mountains which cover our maps. Useless to speak of what might be done with regard to the ethnography of Western and South-Western China. A most attractive exploration would be certainly that of Indo-China in all directions, but it is to be feared that such an exploration will remain for a long time a simple dream, because of the political institutions of this terrestrial paradise. But the exploration of Siam and Annam is one of the most necessary geographical *desiderata.* Without speaking of the Asiatic islands, where so much remains to do, M. Venoukoff points out that British India is certainly one of the best explored countries in the world, and that several parts of Europe are far behind India as to our geographical knowledge of them; but it is not the case as to those countries which are situated to the north-west of India. Afghanistan and Beluchistan await explorers, especially for certain, perhaps the most important, parts of them, as well as Southern Turkestan and the land of the Turkomans, where so much remains to do. Khorassan and Western Persia are quite well known, but Iran remains unknown; of course the exploration of these deserts, as well as of those of the interior of Arabia, would afford very great difficulties and give comparatively few scientific results. But a thorough geographical exploration of Armenia and of Asia Minor is most desirable; and, to finish with Turkey, M. Venoukoff asks if the Straits of the Hellespont and Bosphorus will

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be seriously explored as to the most important question of the existence of an undercurrent in these straits?

As seen from this short sketch, there remains plenty of work for geographers and naturalists on our continent, and we may only express the wish that M. Venoukoff's idea of publishing a sketch of the "Unknown Lands," with a summary of the most important questions with regard to them, were executed on a larger scale, and that such a compendium were put into the hands of every young geographer.

NOTES

WE heartily commend to the attention of our readers the announcement of the Rolleston Memorial Committee, to be found in our advertising pages.

THE Scottish Zoological Laboratory, which last year supplied Mr. G. J. Romanes and Prof. Ewart with the material for their researches on Echinodermata, published in the Croonian Lecture, is this year to be placed at Oban. Those who intend to avail themselves of the advantages held out by this institution for the purposes of original work, are requested to communicate with Prof. Ewart, the University, Aberdeen.

THE accommodation for anatomical work at the Prosector's rooms in the Zoological Society's Gardens, which has hitherto been somewhat limited, has lately been increased by the erection of three new working-rooms, intended for the use of students. These rooms are now finished, and are at present tenanted by a small Long-Vacation class from Cambridge, who, under the superintendence of Mr. T. T. Lister, the Demonstrator of Comparative Anatomy in that University, are studying practically the anatomy of the *Mammalia* on the abundant material in that group provided by the Society's Menagerie. The class, it may be remarked, includes two lady students from Newnham College. It is to be hoped that when this class concludes its labours at the end of the month, other students may be found disposed to profit by the new facilities for work afforded them by the Zoological Society, and that thus the expense incurred in the erection of these new rooms may be fully justified by the increased scientific results reaped in the Regent's Park from the superabundant material at the disposal of Mr. Forbes.

THE honour of Knighthood has been conferred upon Mr. F. J. Bramwell, C.E., F.R.S., for his services to technical education.

THE German Emperor has conferred on Dr. Schliemann the Prussian Order of the Crown of the Second Class.

THE death is announced, at the age of seventy-seven, of Mr. Hewett Cottrell Watson, the well known English botanist.

DR. FERDINAND KELLER, the well-known Swiss archæologist, died at Zurich on July 21, in his eighty-first year. Dr. Keller had a decided taste for science in his youth, and shortly after leaving the University went to Paris, where he spent some time in the study of natural history. In 1832 he discovered a number of Celtic grave-mounds on the Burghölzli, a circumstance that led to the formation of the national Swiss Antiquarian Society. Of this Keller was named president, a position that he occupied for many years. The first work of the society was the exploration of the Burghölzli; and other similar researches, which threw much light on the primeval history of Switzerland, were undertaken. In 1837 began the publication of the Society's *Communications*, thirty volumes of which were wholly illustrated, and almost wholly written, by the president. In 1853 he opened the series of researches into the origin of Swiss lake-dwellings which have made his name so widely known, and revealed the way of life, in its minutest details, of a race of men whose mere existence had hardly before been suspected. Between 1860 and 1864 Dr. Keller gave to the world the results of his investigation of the Roman antiquities of eastern Switzerland. He wrote or edited further a history of the Abbey of Zurich, of the arms of Zurich, and sundry miscellaneous papers relating to life and culture in the middle ages. Until past his eighty-first year Dr. Keller continued to be an active and energetic member of the society which he had founded.

THE thirty-fourth summer meeting of the Institution of Mechanical Engineers was opened on Tuesday in Newcastle-on-Tyne, this being the third visit of the Institution to that town. The chair was occupied by the president, Mr. Edward A. Cowper. The president, after some remarks on foreign competition, gave a statement of the result of the progress of mechanical engineering during the past twelve years, and expressed the hope that the latter part of the present century would be marked not only by small improvements, but by many substantial inventions for the good of mankind. Mr. I. Lowthian Bell read an exhaustive paper on the Tyne as connected with the history of engineering, and a paper by Mr. F. C. Marshall of Newcastle, on the progress and development of the marine engine, was also read.

THE *Sydney Mail* brings us the welcome news that the Biological Station has been fairly established at Watson's Bay, under the direction of the well-known Russian naturalist, Dr. Miklucho-Maclay. During the last two years Mr. Maclay has been endeavouring to establish a zoological station in the neighbourhood of Sydney. Being seconded in his efforts by the Royal and Linnean Societies of Victoria and by the Royal Society of New South Wales, he has obtained from the Government an eligible site at Watson's Bay, most appropriate for the purpose. The station is situated on the shallow basin of Port Jackson, and close to the deep water of the Pacific, with large freshwater swamps and lagoons in the immediate neighbourhood, and a vast tract of wild forest country to the north, which probably will remain for a long time to come in its primitive wildness. The communication between Watson's Bay and Sydney by steamer being frequent and rapid (half an hour), the scientific work at the station will be greatly facilitated by the museums, gardens, and libraries of Sydney. The expenses for the building are estimated at 600*l*., and will be covered by the sum of 300*l*. already allowed by Government and by the subscriptions, whilst the yearly expenses will probably be covered by annual grants of the Linnean and Royal Societies of Victoria and of New South Wales. The building, which stands on a slight eminence overlooking Camp Cove, with lovely views from the balconies on all the four sides, has been constructed to suit the requirements of a biological laboratory. It has five work-rooms, two bed-rooms, a bath-room, and a room for stores, plenty of light being provided for the work-rooms, which are fifteen feet by twelve feet each and twelve feet high. The partitions between each set of rooms are constructed of studding and double-lined, the space being filled with sawdust for the prevention of noise. The trustees are quite satisfied with the building; even upon so humble a scale as the present, it promises to give very good results. It may be hoped that the institution will become a bond of union between all those in Australia who are interested in biological research. As to the expected results we can but repeat M. Maclay's words: "Next after the tropics (which are the richest in animal life) the widest field offered to the investigator of nature, and consequently the most suitable region for the establishment of zoological stations, is Australia, with a fauna so interesting, so important, and so far from being sufficiently known, especially as regards anatomy and embryology."

PROF. C. V. RILEY, chief of the U.S. Entomological Commission, has accepted the position of Entomologist to the

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